

Recovery Plan Action Status

Plan Name: Pahrump Killifish Recovery Plan

Plan Status: Final

Plan Date: 17-Mar-80

Lead Agency: USFWS

Lead Office: Nevada Fish And Wildlife Office

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861-6300)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pahrump poolfish (Empetrichthys latos)	2	1111	Eliminate exotic fishes at Corn Creek Springs	Ongoing Not Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Predator and Competitor Control	Internal Field Assistance	Action was implemented in 1977 and in subsequent years. The Recovery action is currently out-of-date based on the status of the species at Corn Creek; however, the action may need to be resumed in the future. In 2008, goldfish were common, and in 2007 convict cichlids were detected.
Pahrump poolfish (Empetrichthys latos)	2	1112	Control bullfrogs and turtles at Corn Creek Springs	Ongoing Not Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Predator and Competitor Control	Internal Field Assistance, Volunteer	Control efforts were never successful; however, studies showed that bullfrogs were not predated poolfish at high levels. Recovery action is currently out-of-date based on the status of the species at Corn Creek; however, the action may need to be resumed in the future.
Pahrump poolfish (Empetrichthys latos)	2	1113	Control depredating birds at Corn Creek Springs	Obsolete			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Depredation Control	Internal Field Assistance	The recovery action is out-of-date based on the status of the species at Corn Creek. Refugia is enclosed and inaccessible to birds.
Pahrump poolfish (Empetrichthys latos)	2	1121	Concrete inflow ditch at Corn Creek Springs	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance	Recovery action was completed in 1977.

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Pahrump poolfish (Empetrichthys latos)	2	1122	Cover springs at Corn Creek Springs	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance	The recovery action was completed in 1978. However, in subsequent years the covers were removed and the springs were rehabilitated. The covers were determined to be detrimental to the endemic Corn Creek Pyrg, and obsolete in regards to poolfish.
Pahrump poolfish (Empetrichthys latos)	2	1123	Control vegetation at Corn Creek Springs	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Volunteer	
Pahrump poolfish (Empetrichthys latos)	2	1124	Construct second pond at Corn Creek Springs	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	The recovery action was completed in 1978. Currently, however, the species is not located in the ponds at Corn Creek. An aboveground refugia constructed in 2004-2005 is the only location containing the species at Corn Creek.
Pahrump poolfish (Empetrichthys latos)	2	1125	Rehabilitate lower pond at Corn Creek Springs	Not Started			U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance	Currently, other than in the above ground tank, the species is only located accidentally in the middle pond at Corn Creek. An above ground refugia constructed in 2004-2005 is the only location containing the species at Corn Creek.
Pahrump poolfish (Empetrichthys latos)	2	1126	Acquire aquifer at Corn Creek Springs	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service	Acquisition: Other	Internal Administrative, Internal Technical Assistance	Vested water rights at Corn Creek Springs were filed for and received by the Service from the State of Nevada.

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Pahrump poolfish (Empetrichthys latos)	2	1131	Corn Creek, establish censusing technique	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Technical Assistance	Mark-recapture survey methodology was established as the censusing technique.
Pahrump poolfish (Empetrichthys latos)	2	1132	Corn Creek, recommend censusing personnel	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Field Assistance	NDOW and USFWS were designated as censusing personnel.
Pahrump poolfish (Empetrichthys latos)	2	1133	Corn Creek, conduct census	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Field Assistance	NDOW and USFWS census annually.
Pahrump poolfish (Empetrichthys latos)	2	1211	Shoshone Ponds, establish censusing techniques	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Field Assistance	Mark-recapture survey methodology was established as the censusing technique.
Pahrump poolfish (Empetrichthys latos)	2	1212	Shoshone Ponds, recommend censusing personnel	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Field Assistance	NDOW and USFWS were designated as censusing personnel.
Pahrump poolfish (Empetrichthys latos)	2	1213	Shoshone Ponds, conduct census	Ongoing Current	Prior to FY 1995		U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Population Surveys	Internal Field Assistance, Internal Technical Assistance	NDOW and USFWS census annually.
Pahrump poolfish (Empetrichthys latos)	2	1221	Control water in Shoshone Ponds	Ongoing Current	Prior to FY 1995		U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Internal Technical Assistance	BLM initiating project in late 2008/early 2009 to enhance water infrastructure and its interface with cultural resources as well as the poolfish
Pahrump poolfish (Empetrichthys latos)	2	1222	Control vegetation in Shoshone Ponds	Not Started			U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	

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Pahrump poolfish (Empetrichthys latos)	2	211	Remove exotics at Spring Mountain Ranch	Ongoing Not Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Internal Field Assistance	Bass were removed in the 1980s. No exotics known to be currently affecting the species at Spring Mountain Ranch, but monitoring for exotics occurs during species surveys.
Pahrump poolfish (Empetrichthys latos)	2	212	Remove predators at Spring Mountain Ranch	Ongoing Not Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Predator and Competitor Control	Internal Field Assistance	Bass removed in the 1980s. No predators known to be currently affecting the species at Spring Mountain Ranch, but monitoring for predators occurs during species surveys.
Pahrump poolfish (Empetrichthys latos)	3	213	Control vegetation at Spring Mountain Ranch	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, Nevada Division of State Parks, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	This recovery action has been implemented periodically by the Nevada Division of State Parks under a 1995 section 10(a)(1)(B) permit and Habitat Conservation Plan.
Pahrump poolfish (Empetrichthys latos)	3	214	Prepare management plan for Spring Mountain Ranch	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	Nevada Department of Wildlife, Nevada Division of State Parks, U.S. Fish and Wildlife Service	Management: Planning	Internal Technical Assistance	A habitat conservation plan for the species at Spring Mountain Ranch was completed and permitted in 1995.
Pahrump poolfish (Empetrichthys latos)	3	215	Acquire Spring Mountain Ranch	Complete	Prior to FY 1995	Prior to FY 1995	Nevada Division of State Parks	Acquisition: General	Internal Administrative	The recovery action was completed in the 1970s.
Pahrump poolfish (Empetrichthys latos)	2	221	Restore habitat at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance, Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	2	222	Enhance biological factors at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	
Pahrump poolfish (Empetrichthys latos)	2	223	Restore water supply at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Technical Assistance	

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Pahrump poolfish (Empetrichthys latos)	2	224	Prepare and implement management plan at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: General, Management: Planning	Internal Field Assistance, Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	2	225	Acquire and control property at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Acquisition	Contract, Internal Administrative	
Pahrump poolfish (Empetrichthys latos)	1	2311	Transplant site, evaluate candidate sites	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Internal Field Assistance, Internal Technical Assistance	Candidate sites multiple transplant locations have continued to be evaluated, as needed, since the 1980s.
Pahrump poolfish (Empetrichthys latos)	1	2312	Transplant site, specify habitat selection i.e., chemical, physical	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Internal Technical Assistance	There is a need to investigate habitat characteristics and their impacts on the genetic and phenotypic character of the population
Pahrump poolfish (Empetrichthys latos)	1	2313	Determine need for additional transplants	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Contract, Internal Technical Assistance	Occuring on an ongoing basis, as needed, since the 1980s. There is a need for a genetic management plan, as well as determination of impacts of the specific refuges on the genetic makeup of the population.
Pahrump poolfish (Empetrichthys latos)	1	2321	Transplant site, prepare management plan	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Contract, Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	1	2322	Transplant site, acquire property and water	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Acquisition	Contract, Internal Administrative	
Pahrump poolfish (Empetrichthys latos)	1	233	Select transplant seed stock	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Reintroduction	Internal Technical Assistance	

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Pahrump poolfish (Empetrichthys latos)	2	234	Perform transplants	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Reintroduction	Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	1	241	Determine transplant population regime	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Demographic Studies	Contract, Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	242	Determine transplant fecundity	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Demographic Studies	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	243	Determine transplant age-growth rate	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Demographic Studies	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	244	Determine transplant population size, etc.	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Demographic Studies	Contract, Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	311	Determine productivity of habitat	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	312	Determine habitat diversity	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	313	Investigate water chemistry of habitat	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	

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Pahrump poolfish (Empetrichthys latos)	1	314	Determine yearly temperature regime	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Habitat Requirements	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	315	Determine volume configuration of habitat	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	321	Determine interactions of killifish vs. bullfrogs	Complete	Prior to FY 1995	Prior to FY 1995	Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Predator and Competitor Control	Internal Field Assistance, Internal Technical Assistance	USFWS and NDOW conducted studies that showed bullfrogs were not predated poolfish at high levels.
Pahrump poolfish (Empetrichthys latos)	1	322	Determine food habits	Complete	FY 2000 - FY 2004	FY 2000 - FY 2004	Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	Completed by NDOW.
Pahrump poolfish (Empetrichthys latos)	1	323	Study spawning ecology	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Species Expert	
Pahrump poolfish (Empetrichthys latos)	1	324	Determine water temperature preferences	Partially Complete	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning, Research: Habitat Requirements	Internal Technical Assistance, Species Expert	Partially completed by Selby (1977) thermal ecology thesis.
Pahrump poolfish (Empetrichthys latos)	1	325	Determine substrate requirements	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Internal Technical Assistance, Species Expert	

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Pahrump poolfish (Empetrichthys latos)	1	33	Analyze data from studies, prepare management recommendations as appropriate	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	1	34	Conduct feasibility study at Manse Springs	Not Started			Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Management: Planning	Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	3	4	Delineate essential habitat at Spring Mountain Ranch	Partially Complete	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Management: Planning	Internal Technical Assistance	This recovery action has been completed informally, but not officially through the Federal Register, such as designation of critical habitat.
Pahrump poolfish (Empetrichthys latos)	1	51	Enforce state and federal regulations to protect fish	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Law Enforcement	Internal Field Assistance	
Pahrump poolfish (Empetrichthys latos)	1	52	Protect habitat; enforce trespass	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Law Enforcement	Internal Field Assistance	
Pahrump poolfish (Empetrichthys latos)	1	53	Coordinate action of enforcement	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Law Enforcement	Internal Technical Assistance	
Pahrump poolfish (Empetrichthys latos)	2	611	Provide information to news media, TV and radio	Ongoing Current	Prior to FY 1995		Nevada Department of Wildlife, U.S. Fish and Wildlife Service	Other: Information and Education	Internal Technical Assistance	Each agency contribution
Pahrump poolfish (Empetrichthys latos)	2	612	Prepare and distribute brochure on recovery effort	Not Started			Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Information and Education	Contract, Internal Technical Assistance	

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Pahrump poolfish (Empetrichthys latos)	2	613	Prepare articles for publication	Ongoing Current	FY 2000 - FY 2004		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Information and Education, Research	Internal Technical Assistance, Species Expert	Desert Fishes Council
Pahrump poolfish (Empetrichthys latos)	2	62	Install information signs at federal and state areas	Partially Complete	FY 2000 - FY 2004		Nevada Department of Wildlife, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service	Other: Information and Education	Internal Field Assistance	Signs with interpretive information at Corn Creek refugium on Desert NWR.